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| WOLF GREENFIELD & SACKS, PC FEDERAL RESERVE PLAZA 600 ATLANTIC AVENUE BOSTON, MA 02210-2206 | | | | |
| | | | EXAMINER NGUYEN, VAN THU T | |
| | | | ART UNIT 2824 | PAPER NUMBER |

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,165

Applicant(s)

WUIDART, LUC

Examiner

VanThu Nguyen

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/05/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9 and 11-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9 and 11-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. Claims 1, 3-9, 11-17 are pending.
2. Claims 2, 10 are cancelled.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-9, 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wells (U.S. Patent No. 6,687,325) in view of Abadeer et al. (U.S. Patent No. 5,334,880, hereafter Abadeer).

Regarding claim 1, Wells discloses, in FIG. 1, a monotonic counter (monotonic counter 116) formed as an integrated circuit (see column 2 lines 37-48), each counting bit being provided by a memory cell (EPROM, or other type of nonvolatile storage, see column 5 lines 39-44).

However, Wells does not disclose that each of the memory cells having limitations as set forth in claim 1, lines 2-5.

Abadeer discloses, in FIG. 1B, a programmable antifuse circuit formed of a polysilicon resistor (F1 and F2' in FIG. 1B and its detail in FIG. 3), programmable by irreversible decrease in its value (see Abstract); wherein the programming of said resistor is performed by temporarily submitting it to a constraint current greater than a current for which its value exhibits a maximum (current greater than threshold current I_{TH}) (see column 7, lines 14-61).

Since Wells and Abadeer are both from the same field of endeavor, the purpose disclosed by Abadeer would have been recognized in the pertinent art of Wells.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use different types of nonvolatile memories, such as programmable antifuse circuit disclosed in Abadeer, other than EPROM because it is suggested in Wells (see column 5, lines 39-44).

Regarding claim 3, Wells discloses a circuit (all elements except memory blocks 41 in FIG. 4) for decoding the states contained in said cells for providing the resulting count (via DATA terminal).

Regarding claim 4-5, Abadeer further discloses, in FIG. 1B, each counting cell comprises, in parallel between two terminals of application of a supply voltage (between voltage supply and ground), two branches (one for each of polysilicon programming resistors F1 and F2') each comprising: a first polysilicon programming resistor (F1 or F2') connected between a first supply terminal (voltage supply) and a terminal of differential reading of the cell state (N1 or N2); and at least one programming switch (QPR1 or QPR2) connecting one of said read terminals to the second supply terminal (ground voltage).

Regarding claim 6, Abadeer inherently discloses that programming resistors F1 and F2' are two polysilicon resistors identical in size and in possible doping (F1 and F2' have equal initial resistance values).

Regarding claim 7, Abadeer also discloses each counting cell comprises a programming transistor (e.g. QPR1 or QPR2) in series with a programming resistor (e.g. F1 or F2', respectively)

Regarding claim 8, Abadeer discloses an inherent circuit for controlling the programming of each of the counting cells, capable of providing individual control signals to the programming switches (via control signals PRG1, PRG2, S1, S2, PASS, see Fig. 1B).

Regarding claim 9, 11-17, they are rejected under U.S.C. 103(a) since they recite similar limitations as in claims 1, 3-8.

Response to Arguments

5. Applicant's arguments filed May 5, 2006 have been fully considered but they are not persuasive.

(i) Applicant argues that there is no teaching or suggestion in Wells or Abadeer either alone, or in combination, to combine the references. Applicant is directed to Wells, column 5 lines 30-44, for suggestion of using other types of nonvolatile memory for the monotonic counter.

(ii) Applicant argues that the threshold current which Abadeer refers (column 7-8) does not corresponding to the current for which the value of the resistor exhibits a maximum. Abadeer cites, in Abstract, "Each of the first resistors is an unsilicided polysilicon conductor *which has an irreversible resistance decrease when a predetermined threshold current is applied for a minimum period of time*" [emphasis added], which implies that the threshold current sets the first resistor to an initial resistance of the maximum because it can only decreases in value. Abadeer, FIG. 4, shows when current greater than threshold current is applied, its corresponding resistance is only a fraction of the initial resistance. Therefore, Abadeer does teach the threshold current is corresponding to the current for which the value of the resistor exhibits a maximum.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VanThu Nguyen whose telephone number is (571) 272-1881. The examiner can normally be reached on Monday-Friday, 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2824

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 25, 2006



VanThu Nguyen
Primary Examiner
Art Unit 2824